

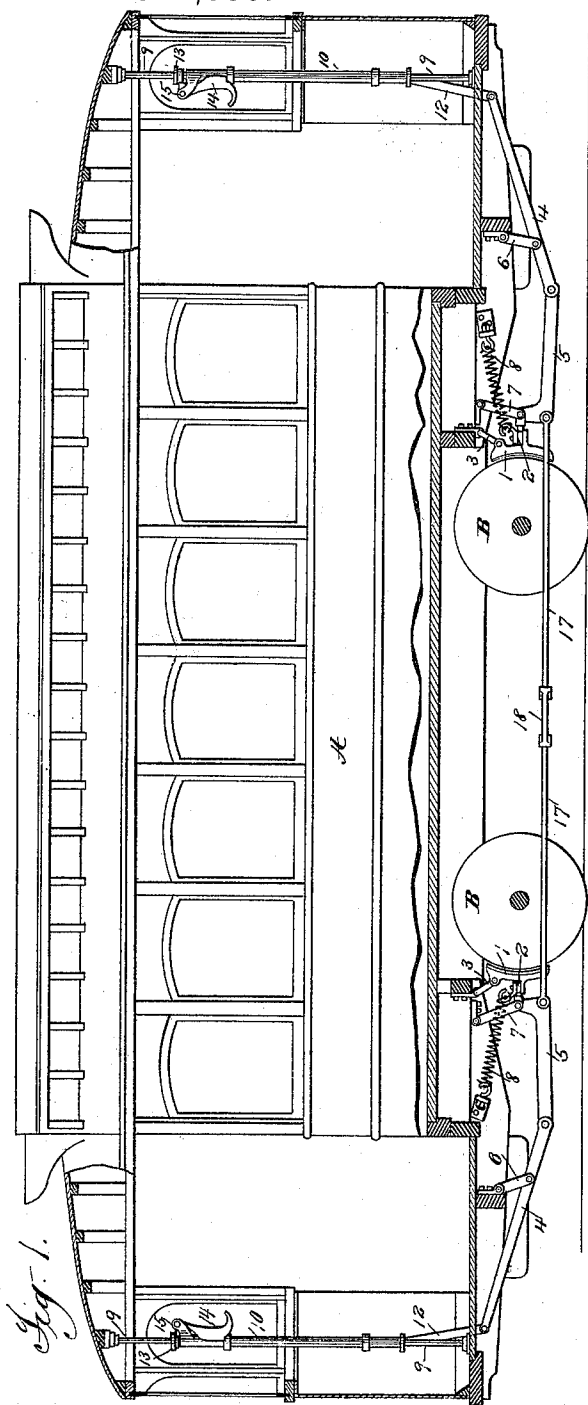
(No Model.)

2 Sheets—Sheet 1.

W. MAIN.
BRAKE FOR RAILWAY CARS.

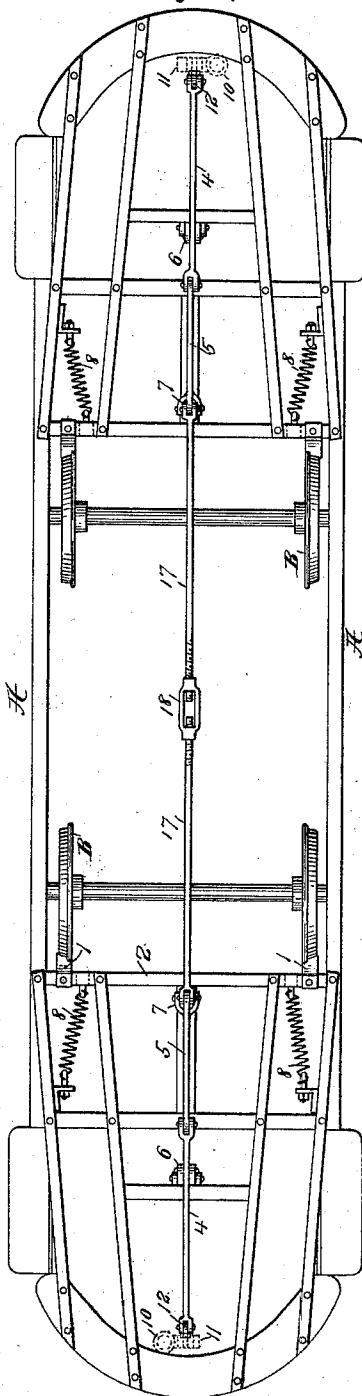
No. 541,866.

Patented July 2, 1895.



Attest:
G. H. B. O. L.
J. M. B. O. L.

Fig. 2.



Inventor:
William Main
by Phelps Phelps & Hues
Attys

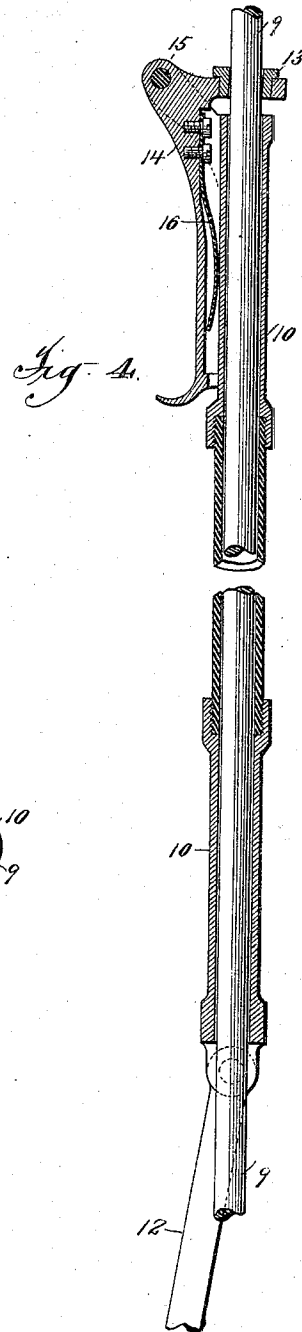
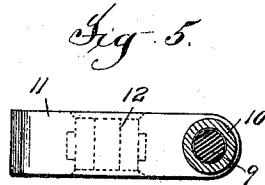
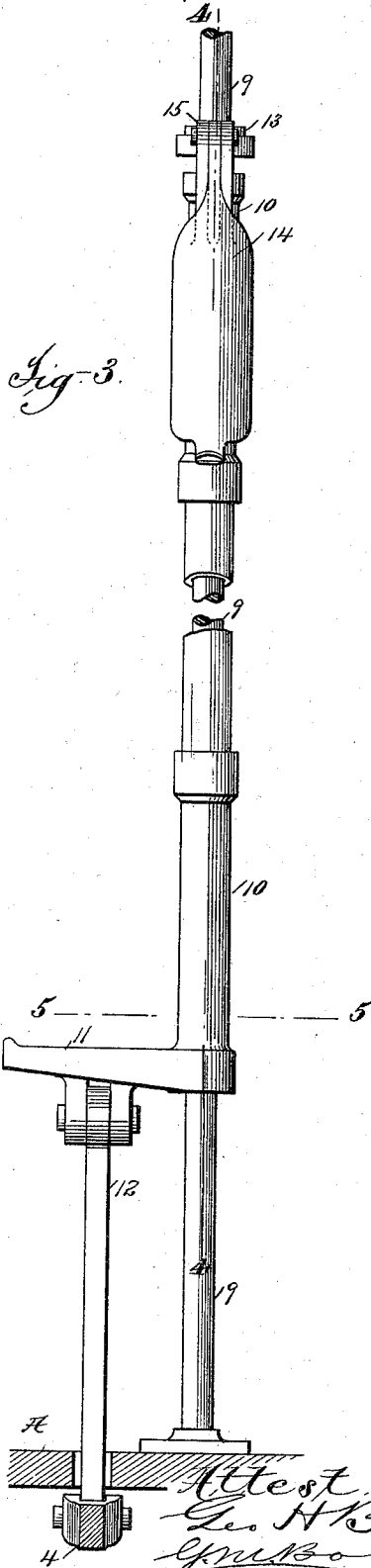
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UNITED STATES PATENT OFFICE.

WILLIAM MAIN, OF BROOKLYN, NEW YORK.

BRAKE FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 541,866, dated July 2, 1895.

Application filed October 17, 1890. Serial No. 368,432. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MAIN, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Car-Brakes, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

[10] The object of the present invention is to provide an improved car brake, and to this end the invention consists in various constructions and combinations of parts, all as particularly described and claimed herein.

15 In the accompanying drawings, Figure 1 is a sectional side elevation of a car provided with my improved brake. Fig. 2 is a reverse plan showing the bottom of the car. Fig. 3 is an elevation on an enlarged scale, showing the means for locking and operating the brake. Figs. 4 and 5 are sections on the lines 4-4 and 5-5 of Fig. 3, respectively.

Referring to said drawings, A is the body of the car and B the wheels at opposite ends of the same. The two pairs of wheels B are engaged by brake shoes placed outside the same and moving in opposite directions for applying the brake, and brake mechanisms are placed at each end of the car.

30 As the two brake mechanisms are identical in construction, only one need be described, the same references being used for corresponding parts at each end of the car.

The brake shoes 1 engaging the wheels B at one end of the car are carried by a cross-bar 2 which extends transversely of and beneath the car and is supported to swing freely by links 3 secured to the frame. Extending longitudinally of the car and preferably centrally thereto, as shown, is a compound lever consisting of bars 4, 5 supported from the frame of the car by links 6, 7, so as to swing freely in a vertical plane and longitudinally of the car. The inner end of the compound lever is pivotally secured to the cross-bar 2 so that the operating movement of the lever presses the brake shoes 1 against the wheel, the brake shoes being normally withdrawn by springs 8 connected to cross-bar 2 and the car frame.

50 For operating the compound lever for applying the brake, a rod 9 is mounted vertically or substantially vertically at the end of

the car in convenient position for the driver, and a sleeve 10 slides freely upon this rod, being provided with a pedal 11 and connected 55 by a link 12 with the outer end of the bar 4. The sleeve 10 may be made in any suitable manner, but will preferably consist, as shown, of a casting having the pedal 11, and a tube extending upward nearly to the top of the car 60 where it is connected to a second casting carrying the locking device.

The locking device consists of a ring clutch 13 engaging the bar 9, and carried by a handle 14 pivoted in a lug 15 of the sleeve 10, the 65 handle 14 being normally pressed outward for the engagement of the clutch with the rod by means of a spring 16.

The brake mechanisms at the opposite ends of the car are preferably connected, so that 70 both sets of brakes are applied by the operation of either brake mechanism, and these connections are preferably made adjustable so that the proper position of the brake shoes relatively to the wheels may be maintained. 75 I have shown a simple and convenient form of connection consisting of rods 17 pivoted to the compound levers and extending inward to the middle of the car, where they are adjustably connected by a turn buckle 18. 80

The operation of the device will be readily understood from the drawings and a brief description.

When the brake is to be applied from either end of the car, the driver presses the handle 85 16 to release the ring clutch and throws his weight upon the pedal 11, the pressure upon the latter being multiplied by the swinging compound lever and transmitted to the bars 2 and sets of brake shoes, moving the latter 90 in opposite directions against the wheels and applying both brakes. When the brake has been applied it will again be locked by the ring clutch 13 upon the release of the handle 16. When the brake is to be removed the handle 16 is again pressed, unlocking the clutch 95 and the springs 8 return the bars 2 and brake shoes to their normal position.

It will be seen that my invention provides a simple and very convenient form of brake, 100 in which the full weight of the driver is utilized and largely multiplied, and in which the brake may readily and conveniently be locked and unlocked, as desired. By the swinging

compound levers and their direct connection to the bars carrying the brake shoes and to the operating sleeves, the lost motion existing in brakes in which chains and similar forms of connections are used is avoided so that a very slight movement of the sleeve 10 is required to apply the brake. By the direct connections between the two brake mechanisms and the means of adjustment provided, the movement of either mechanism is positively transmitted to the other and all wear of the brake shoes may be readily compensated for, and all the brake shoes adjusted by a single movement so as to be held normally close to the surface of the wheels.

It will be understood that the brake mechanism may be provided at but one end of the car, or the brake mechanisms at opposite ends may not be connected together.

The compound levers may be operated and locked by other means than that shown, and other forms of brake mechanisms may be combined with my special means for applying foot pressure and my locking device, and my invention is not to be limited to the combination shown, but the brake mechanisms and operating and locking devices form parts of my invention, independently of their combination.

It will be understood, also, that the brake shoes of the two mechanisms may act upon opposite sides of the same wheel, if preferred, instead of different wheels, and the construction shown may be varied otherwise in details without departing from my invention.

In some cases the compound levers may be supported from the car so as to swing in a horizontal plane, and my invention is not to be limited to any special plane of movement of the compound levers, when supported independently of the brake shoes or bars by which the latter are carried.

What I claim is—

1. The combination with brake shoes moving in opposite directions to apply the brake, of compound levers by which the respective brake shoes are operated having their pivots supported movably relatively to the body of the car, and connections between the brake mechanisms whereby the operation of either compound lever moves the brake shoes in opposite directions to apply both brakes, substantially as described.

2. The combination with a swinging brake shoe, of a compound lever operating said brake shoe, and a swinging member supporting said compound lever independently of the brake shoe, substantially as described.

3. The combination with a swinging brake shoe, of a compound lever operating said brake shoe to apply the brake, a swinging member supporting said compound lever independently of the brake shoe, and a spring or springs for returning said brake shoe and compound lever to their normal positions, substantially as described.

4. The combination with a swinging cross

bar carrying brake shoes, of a compound lever connected to and operating said bar to apply the brake, a swinging member supporting said compound lever independently of the brake shoes, and a spring or springs for returning said bar and compound lever to their normal positions, substantially as described.

5. The combination with brake shoes moving in opposite directions to apply the brake, of compound levers by which the respective brake shoes are operated, swinging members supporting said compound levers, and connections between the brake mechanisms whereby the operation of either compound lever moves the brake shoes in opposite directions to apply both brakes, substantially as described.

6. The combination with brake shoes moving in opposite directions to apply the brake, of compound levers by which the respective brake shoes are operated, swinging members supporting said compound levers, and adjustable connections between the two brake mechanisms, whereby the brake shoes may be adjusted relatively to the wheel or wheels, substantially as described.

7. The combination with a brake mechanism, of a rod, a sleeve sliding on the rod, and connected to the brake mechanism for operating the same, and a ring clutch moving with said sleeve and engaging the rod to lock the brake, substantially as described.

8. The combination with a brake mechanism, of a vertical or substantially vertical rod, a sleeve sliding on said rod and operated by foot pressure to apply the brake, and a ring clutch moving with said sleeve and engaging the rod to lock the brake, substantially as described.

9. The combination with a brake mechanism operated by foot pressure to apply the brake, of a vertical or substantially vertical rod, and a ring clutch connected to and moving with the brake mechanism and engaging the rod to lock the brake, substantially as described.

10. The combination with a swinging cross bar carrying brake shoes, of a swinging compound lever operating said bar and operated by foot pressure, and a ring clutch device for locking the brake, substantially as described.

11. The combination with a swinging cross bar carrying brake shoes, of a swinging compound lever operating said bar to apply the brake, a vertical or substantially vertical rod, a sleeve sliding on said rod and actuated by foot pressure to operate the compound lever, a ring clutch moving with said sleeve and engaging the rod to lock the brake, and a spring or springs for returning the parts to their normal positions, substantially as described.

12. The combination with swinging cross bars carrying brake shoes and moving in opposite directions to apply the brake, of swinging compound levers operating said bars and operated from opposite ends of the car by foot pressure, connections between the compound

levers, ring clutch devices at opposite ends of the car for locking the brake, and springs for returning the parts to their normal positions, substantially as described.

- 5 13. The combination with swinging cross bars carrying brake shoes and moving in opposite directions to apply the brake, of swinging compound levers operating said bars and operated from opposite ends of the car by foot pressure, adjustable connections between the
10 compound levers, ring clutch devices at opposite ends of the car for locking the brake, and springs for returning the parts to their normal positions, substantially as described.
- 15 14. The combination with swinging cross bars carrying brake shoes and moving in opposite directions to apply the brake, of swing-

ing compound levers operating said bars, connections between the compound levers, a vertical or substantially vertical rod at each end 20 of the car, sleeves sliding on said rods and actuated by foot pressure to operate the compound levers, ring clutches moving with said sleeves and engaging the rods to lock the brake, and springs for returning the parts to 25 their normal positions, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM MAIN.

Witnesses:

T. H. PALMER,
T. F. KEHOE.